UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

ABU DHABI COMMERCIAL BANK, et al., Individually and On Behalf of All Others Similarly Situated, Plaintiffs, vs. MORGAN STANLEY & CO. INCORPORATED, et al., Defendants.	Civil Action No. 1:08-cv-07508 <u>CLASS ACTION</u> EXPERT REBUTTAL REPORT OF JOSEPH E. STIGLITZ, Ph.D.

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I. INTRODUCTION

1. I filed a report in this matter, dated September 17, 2012 (the "Stiglitz Report" or my "original report"). I was asked to review the Expert Report of Mark J. Garmaise, Ph.D., dated October 17, 2012 (the "Garmaise Report") and respond to certain criticisms of my original report.[1]

2. I find Dr. Garmaise's criticisms of the methodology that I used to be without merit. He advances a fictitious standard of economic methodology that is inappropriately narrow and not representative of what is used and widely-accepted in economics. Dr. Garmaise also fails to advance any of his own analysis – either to rebut my opinions or to offer affirmative opinions of his own. In this rebuttal I first underscore why the narrow empirical or statistical methodology advanced by Dr. Garmaise is inappropriate to address the questions I was asked to answer. Second, I describe how I used standard economic methods and the principles of Information Economics to reach the conclusions in my original report. Finally, I rebut Dr. Garmaise's tautological claim that sophisticated parties cannot be affected by information asymmetries because they are sophisticated.

3. In short, after considering the report of Dr. Garmaise I continue to stand by the conclusions of my original report, and my opinions remain unchanged.

II. THE METHOD I USED IS A STANDARD AND ACCEPTED ANALYTIC APPROACH IN ECONOMICS

4. Contrary to Dr. Garmaise's assertions, the approach I used in my report represents a standard and accepted analytic approach for answering questions of the kind that were posed to me for investigation in this matter. As stated in my report, my task was:[2]

> to analyze the facts and circumstances of this case to determine the asymmetries of information between sellers and buyers of securities issued by the Cheyne SIV, the incentives of sellers and credit rating agencies ("CRAs"), and the impact of seller and CRA incentives and asymmetric information on the buyers of securities issued by Cheyne SIV.

5. Dr. Garmaise seems to argue that the only appropriate scientific methodology for my task is to use econometric or statistical techniques.[3] While econometric and statistical techniques have various applications in economics, and papers using such techniques appear in various peer-reviewed journal articles, Dr. Garmaise ignores the fact that there are many other analytical

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1 For this rebuttal report, I relied on the documents cited in my rebuttal report, my original report, and the appendices to my original report.

2 Stiglitz Report at ¶10.

3 See, Garmaise Report at ¶¶3(a), 6, 6(a), and 6(c).

techniques and methods in an economist's toolbox in addition to econometric analysis.[4] For instance, valid, rigorous, and accepted economic approaches include:

- Case studies that collect information from market participants, documents, and other publically-available evidence, and then marshal those data to formulate and test hypotheses in a way that is theoretically and empirically sound. One of the most-widely regarded case studies was by Milton Freidman (the 1976 Nobel Laureate in Economics) and Anna Schwartz analyzing the Great Depression.[5] Case studies are used widely in other social sciences as well, particularly when experimental techniques are not practical, when the focus of the study is on contextual conditions, and the focus of the inquiry is on questions such as "why" and "how." Case studies have appeared in a wide array of peer-reviewed economic and financial journals. Indeed, in 1989 the *Journal of Financial Economics* began a new section "containing applied papers and case studies. This section provides a high-quality professional outlet for scholarly studies of actual cases, events or practice."[6] Even within the broad scope of "case studies" there can be various types of case studies for various purposes. The variation in case studies can be seen when one considers texts from leading university presses that use economic and financial cases.[7]

- Applied economic theory that explains causal relationships in particular economic circumstances. This is an important branch of economic theory and research, oftentimes informed by other theoretical and case study work, that is necessary to make inferences about causation in an instance of an observed correlation (e.g., in an event study). Applied theory bridges the gap between theory and empiricism, both of which are widely

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4 Not surprisingly, the examples provided by Dr. Garmaise are of little relevance to the questions I was asked to analyze. They deal with general relationships (not specific observations), and focus on syndicated lending, finance, and insurance. While each does discuss asymmetric information and the certain area that is the focus of the paper, they offer *no* mechanism for discussion of the impact of asymmetric information in a *specific instance*, as was the goal in this case. Moreover, the papers Dr. Garmaise cites do not even mention SIVs so even "on average" results from those papers would be of questionable relevance here, given the importance of contextualization (as I noted in my original report and Dr. Garmaise does in his report). See, Garmaise Report at ¶¶ 6(a)–(c) and 17; Stiglitz Report at ¶12.

5 Freidman discussed some of his key findings in his Nobel lecture. See, Friedman, M., 1976, "Inflation and Unemployment: Nobel Memorial Lecture," *Economic Studies*: 267–286.

6 Elsevier, "Journal of Financial Economics: Author Information Pack," October 16, 2012, at p. 1 *available at* www.elsevier.com/locate/jfec.

7 See, e.g., Demirgüç-Kunt, A. and R. Levine (eds.), 2004, *Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*, Cambridge: MIT Press; Ghemawat, P., 1997, *Games Businesses Play: Cases and Models*, Cambridge: MIT Press; Acemoglu, D. and M. Woodford (eds.), 2012, *NBER Macroeconomics Annual 2011*, v. 26, Chicago: The University of Chicago Press; Fullerton, D. and C. Wolfram (eds.), 2012, *The Design and Implementation of US Climate Policy*, Chicago: The University of Chicago Press.

published in peer-reviewed economic journals. Indeed, some economists support a view of economics with a tripartite division between empiricism, theory, and applied economics.[8]

- Behavioral studies that rely on studying the effects of emotional, social, and cognitive factors on individuals' and firms' decisions. Such analyses can rely on a variety of theoretical research (e.g., game theory) and empirical research (e.g., surveys and experiments) to understand deviations between what theoretical "rational" agents would do in certain settings versus what actually happens.

6. Moreover, Dr. Garmaise's approach ignores the fact that many well-regarded economists (including 2011 Nobel Laureate, Christopher Sims) have written about the different methodological approaches taken in economics – each has its pros and cons, but none is the gold standard.[9] As Dr. Sims says: "We would be better off if we spend more time in reading each others' work and less in thinking up grand excuses for ignoring it."[10] Dr. Garmaise, however, fails to perform any analysis of his own (be it econometric, theoretical, or otherwise). Dr. Garmaise narrowly and incorrectly construes "rigorous" economic analysis and, in so doing, marginalizes an important body of economic literature – and a huge swath of the peer-reviewed articles in circulation – that does *not* rely on statistical and/or econometric analyses.

7. In 2011, six preeminent economists (three of them Nobel laureates) selected the "Top 20" articles in celebration of the first 100 years of the *American Economic Review* (widely considered one of the most prestigious peer-reviewed journals in economics).[11] Each article selected has been widely-cited and would rightly be considered "seminal" by most economists today.[12] Yet, under the standard set forth by Dr. Garmaise, no fewer than *twelve* of these twenty articles would be dismissed as they do "not contain any rigorous empirical analysis or statistical hypothesis testing."[13] Many of these articles were written by Nobel Laureates[14] and instead rely

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8 See, Colander, D., 1992, "Retrospectives: The Lost Art of Economics," *Journal of Economic Perspectives*, 6(3): 191–198. See also, Swann, G.M.P., 2006, *Putting Econometrics in its Place: A New Direction in Applied Economics*, Edward Elgar: Cheltenham, UK.

9 See, e.g., Sims, C.A., 1996, "Macroeconomics and Methodology," *Journal of Economic Perspectives*, 10(1): 105–120; Hausman, D.M., 1989, "Economic Methodology in a Nutshell," *Journal of Economic Perspectives*, 3(2): 115–127.

10 Sims, C.A., 1996, "Macroeconomics and Methodology," *Journal of Economic Perspectives*, 10(1): 105–120 at 119.

11 See, Arrow, Kenneth J., B. Douglas Bernheim, Martin S. Feldstein, Daniel L. McFadden, James M. Poterba, and Robert M. Solow, 2011, "100 Years of the *American Economic Review*: The Top 20 Articles," *American Economic Review*, 101(1): 1–8.

12 Only two authors – Peter Diamond (2010 Nobel Laureate) and I – had more than one article selected for inclusion.

13 Garmaise Report at ¶5.

on the countless other tools available to economists, such as those I mentioned above and that I used in this case.

8. Furthermore, Dr. Garmaise himself has published papers that would not meet the "Garmaise Standard" articulated in his report in this case. His 2001 paper investigates security design depending on the assumed behavior of market participants – whether they follow the traditional "rational expectations" model of behavior, or the weaker "rational beliefs" model of behavior (both theoretical models of behavior).[15] In that paper, his first two analyses of "empirical implications" are not driven by using statistics or econometrics. To my mind that does not take away from his scholarly contribution; but it would seem that he now thinks such empirical observations are meritless as they were not subjected to "rigorous empirical analysis or statistical hypothesis testing."[16] This illustrates the absurdity of the standard in Dr. Garmaise's report – it is not even consistent *with his own* publications, let alone the broader economic literature.

9. Contrary to what Dr. Garmaise seems to assert, economists routinely examine the facts and circumstances regarding *specific* cases to test potential explanations for particular outcomes, as I have here and in other cases where I have testified. This approach involves formulating explanations that can be rejected by an examination of the consistency of the explanation with general well-established theories applied to the case at hand, informed by data, i.e. the facts of the case.[17] Dr. Garmaise does not analyze the data and evidence cited in my original report to come to his own conclusions or to criticize my conclusions.

III. MY ORIGINAL REPORT WAS GROUNDED IN WELL-ACCEPTED ECONOMIC METHODS

10. I was asked the following three questions: (i) were there asymmetries of information; (ii) were there incentives for the CRAs and Morgan Stanley to inflate the credit ratings and were their actions consistent with these incentives; and (iii) was reliance on the ratings by the plaintiff investors reasonable. In order to answer these questions, I applied the principles of Information Economics to the data and facts specific to this case, and formed my opinions summarized in my

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14 Works by no fewer than six Nobel Laureates would be excluded under the "Garmaise Standard": Kenneth Arrow (1972 Nobel Laureate), Friedrich Hayek (1974 Nobel Laureate), James Mirrlees (1996 Nobel Laureate), Robert Mundell (1999 Nobel Laureate), me (2001 Nobel Laureate), and Peter Diamond (2010 Nobel Laureate). Depending how narrowly Dr. Garmaise construes proper economic analysis, work by Simon Kuznets (1971 Nobel Laureate) and Milton Friedman (1976 Nobel Laureate) may also be excluded.

15 Garmaise, M., 2001, "Rational Beliefs and Security Design," *The Review of Financial Studies*, 14(4): 1183–1213.

16 Garmaise Report at ¶5.

17 For instance, were it the case that the facts of the case showed that there were <u>no</u> information asymmetries, an economic analysis based on information asymmetries would obviously not be relevant, regardless of any generalizations established about the behavior of markets in which information asymmetries were important.

original report. Based on my rigorous review of the facts and data available in the case record and the public record, I concluded: (a) the defendants had superior information to the plaintiff investors with respect to the Cheyne SIV; (b) the defendants had incentives to inflate the credit ratings on the Cheyne SIV notes, and their actions were consistent with such incentives; and (c) the plaintiffs' reliance on defendants' credit ratings was reasonable. Rigorous here means thorough and detailed, but not statistical.

11. I agree that formulating and testing hypotheses is an important part of economic analysis. However, the tests of alternative hypotheses can be based on a range of kinds of evidence, of which statistical studies are one, but only one. Statistical studies are best aimed at answering broader questions, such as: on average, do investors take into account information asymmetries? Knowing that on average, or in other situations, investors have taken into account information asymmetries is likely to be of only limited relevance in examining the particular questions about the Cheyne SIV that I was asked.[18] I formulated such competing hypotheses, tested them with the existing data and information, and drew conclusions using a completely conventional approach within the field of economics based upon a rigorous review of the facts and data available in the case-specific record and the public record. Any other economist can perform this analysis by their own rigorous review of the facts and data to test for themselves my conclusions.

12. My analysis applied well-established economic theory to the facts of this case – a commonly accepted practice in economics, one that I personally have taken in various academic, consulting, government and litigation investigations, and one that has been taken by other economists, such as in the construction of case studies, applied economic theory, and event studies. In this case, the analysis is based on my expertise in the functioning of financial markets in the presence of information asymmetries. As part of that analysis I considered whether there were incentives for the CRAs and Morgan Stanley to inflate the credit ratings and whether there were mechanisms to mitigate these incentives. The evidence supports my conclusion that there were incentives for the CRAs and Morgan Stanley to inflate the credit ratings and that their actions were consistent with those incentives. Dr. Garmaise has provided no insight into how he could have used econometric or statistical analysis to either identify whether there were incentives for the CRAs and Morgan Stanley to inflate the credit ratings on the Cheyne SIV and determine whether defendants' actions were consistent with incentives.

IV. CONTRARY TO DR. GARMAISE'S ASSERTIONS, A PARTY'S SOPHISTICATION DOES NOT NECESSARILY ELIMINATE INFORMATION ASYMMETRIES

13. Dr. Garmaise's view – that in markets with asymmetric information, when both parties are sophisticated, any information asymmetry will be fully accounted for *because the parties are sophisticated* – is a tautology.[19] Examples abound that contradict this view, oftentimes when a

[18] The reason is simple: statistical and econometric analysis tends to rely on large numbers of observations to arrive at conclusions that hold "on average." However, this case does not deal with the "average" SIV; it deals with the Cheyne SIV in particular. Knowing what happens on average is typically of limited value when analyzing one specific observation.

[19] See, Garmaise Report at ¶¶26–27.

party is faced with strong incentives for misbehavior, be it in this case or elsewhere, and where there are information asymmetries.

14. My own theoretical work, cited in my original report, provides a context for understanding why laws concerning fraud and misrepresentation[20] are important for the functioning of the economy. In addition such work provides an understanding of the consequences for market participants – and for the functioning especially of financial and capital markets – when such laws are not adequately enforced.[21] These laws are necessary in part because the sophistication of buyers cannot necessarily overcome fully situations of asymmetric information and strong incentives for misbehavior.

15. One of the reasons that economists have stressed the importance of anti-fraud laws[22] – prohibitions against deception – is that firms with superior information oftentimes face strong incentives to deceive. Even when both parties are sophisticated, there can be information asymmetries, and one party (the more informed) can exploit the less informed through deception, which undermines the functioning of markets and is one of the key reasons for the existence of anti-fraud laws.

16. Our complex society could not function without a certain amount of trust. No individual examines, for instance, in detail the books of the banks in which he deposits his money. He relies on the honesty of the banks, their compliance with the rules and regulations designed to ensure their solvency, and on the enforcement of those rules and regulations by regulatory authorities and through the legal system. The CRAs and Morgan Stanley were pivotal institutions in this system of "trust." It was reasonable for plaintiffs to rely on the ratings assigned by the CRAs, and, as I indicated in my original report, this reliance was especially important given the role that had been assigned to the CRAs by legislation and regulation.

Date: November 7, 2012

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[20] As well as other aspects of the behavior of market participants that might undermine the functioning of the economy.

[21] See, e.g., Stiglitz, J. E. "Quis Custodiet Ipsos Custodes? Corporate Governance Failures in the Transition," *in Governance, Equity and Global Markets*, *Proceedings from the Annual Bank Conference on Development Economics in Europe*, *June 1999*, pp. 51-84, P.A. Muet & J. E. Stiglitz eds., Conseil d'Analyse economique, Paris, 2000. See also, Hoff, K. and J. E. Stiglitz, "After the Big Bang? Obstacles to the Emergence of the Rule of Law in Post-Communist Societies," *American Economic Review*, 94(3), June 2004, pp. 753-763; Hoff, K. and J. E. Stiglitz, "Exiting a Lawless State," *Economic Journal*, 118(531), August 2008, pp. 1474-1497.

[22] See, e.g., Greenwald, B. and J. E. Stiglitz, "Information, Finance, and Markets: The Architecture of Allocative Mechanisms," *Industrial and Corporate Change*, 1(1), 1992, pp. 37-63; *Finance and the Enterprise,* V. Zamagni (ed.), Academic Press, 1992, pp. 11-36.